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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/584,356	05/14/2007	Michel Foulon	1022702-000211	9485
21839 7590 08/21/2009 BUCHANAN, INGERSOLL & ROONEY PC POST OFFICE BOX 1404 ALEXANDRIA, VA 22313-1404				
EXAMINER				
SASTRI, SATYA B				
ART UNIT		PAPER NUMBER		
1796				
NOTIFICATION DATE		DELIVERY MODE		
08/21/2009		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ADIPFDD@bipc.com

### Office Action Summary

**Application No.**

10/584,356

**Applicant(s)**

FOULON ET AL.

**Examiner**

SATYA B. SASTRI

**Art Unit**

1796

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 May 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 22-39 is/are pending in the application.
- 4a) Of the above claim(s) 31-39 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 22-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/CIS) Paper No(s)/Mail Date 7/9/09

- 4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. This office action is in response to application filed on 7/9/09. Claims 22-39 are now pending in the application.
2. Applicant's election with traverse of Group I invention, claims 22-30, in the reply filed on 7/9/09 is acknowledged. The traversal is on the ground(s) that (1) the application is a national stage filing of a PCT application and all claims (1-15) have been searched in the corresponding PCT application and no lack of unity was found and (2) the restriction fails to even allege that Groups I and II as well as Groups II and III lack a common technical feature. This is not found persuasive for the following reasons:

With regard to (1), a restriction requirement based on lack of unity can be made at any stage of prosecution. The fact that a lack of unity was not indicated in the first stage of prosecution does not preclude a finding of lack of unity at a later stage. The applied standard and the support provided for the finding of lack of unity are consistent with the guidelines of International Preliminary Examination Authority, as stated in the written restriction.

With regard to (2), as noted in paragraph 2 of the office action dated 6/10/09, the technical feature common to Groups I, II and III is hydrotalcite intercalated by silica. This feature is taught by the prior art to Kaminsky et al. (US 7,046,439 B2) in col. 13-14 wherein it is disclosed that colloidal nanoparticles of silica can actually go in between the intercalated clay layers, such as hydrotalcite. Therefore, the common technical feature, i.e. hydrotalcite

intercalated by silica nanoparticles, of Groups I to III fails to define a contribution over US 7,046,439 B2.

In light of above, the requirement is still deemed proper and is therefore made FINAL. Claims 31-39 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 23, 24, 26-28, 30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38

(Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claims recite the broad recitation for at least one divalent cation or a molar ratio, and the claim also recites optional elements which is the narrower statement of the range/limitation.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 22-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaminsky et al. (US 7,046,439 B2).

Kaminsky et al. disclose an optical unit having nano-particle/polymer blend compositions in the surface features (ab.). The compositions include colloidal inorganic oxide particles such as silica, titania, alumina, vanadia, chromia, iron oxide, magnesium oxide, antimony oxide, zinc oxide, tin oxide, titanates and mixtures thereof. The inorganic particles can comprise essentially a single oxide such as silica, a combination of oxide of one type or a core of a material other than a metal oxide on which is deposited an oxide of another type (col. 11, lines 45-55).

As layered materials, hydrotalcites such as is disclosed as one of the most preferred clays. Exemplified hydrotalcite includes magnesium aluminum hydrotalcite of the formula  $\text{Mg}_6\text{Al}_3\text{4}(\text{OH})_{18,8}(\text{CO}_3)_{1,7} \cdot \text{H}_2\text{O}$  (col. 14, lines 8-37).

The prior art further discloses that colloidal inorganic oxide nano-particles and nanoclays can be both used together in the surface features for added utility wherein the inorganic oxide nano-particles can actually go in between the intercalated clay layers (col. 12-13, bridging paragraph).

The prior art fails to disclose compositions comprising haydrotalcite intercalated by silica.

Given the teaching that (1) the inorganic particles can comprise essentially a single oxide such as silica, that (2) the inorganic nano-oxide and may be used in combination with nanoclay particles such as a magnesium aluminum hydrotalcite of the formula  $\text{Mg}_6\text{Al}_3.4(\text{OH})_{18.8}(\text{CO}_3)_{1.7}\text{H}_2\text{O}$  and that (3) when the inorganic nano-oxide and nanoclay particles are used together, the inorganic oxide nano-particles can actually go in between the intercalated clay layers, it would have been obvious to one of ordinary skill in the art to combine silica with magnesium aluminum hydrotalcite of the formula  $\text{Mg}_6\text{Al}_3.4(\text{OH})_{18.8}(\text{CO}_3)_{1.7}\text{H}_2\text{O}$  as clay form the disclosed genus of fillers and thereby arrive at the present invention.

With regard to claims 24 and 26, the presently recited ratio is met by the disclosed formula of the hydrotalcite.

With regard to claims 28-30, the prior art discloses that the inorganic oxide nano-particles have very high refractive index and therefore increase the efficiency of certain surface features such as those designed for collimating light. On the other hand, the nanoclay is disclosed to have refractive indexes lower than that of the polymer and is used to lower the index of refraction of the surface features. Thus, it would have been within the level of ordinary skill in the art to adjust their concentrations to achieve desired surface features. Additionally, the reference teaches that

both, the colloidal inorganic oxide nano-particles and nanoclays can change the mechanical and processing properties of the polymer they are in (col. 12-13, bridging paragraph). Thus, it is the examiner's position that the amount of dispersant in the composition is a result effective variable because changing it will clearly affect the type of product obtained. See MPEP § 2144.05 (B). Case law holds that "discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art." See *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In view of this, it would have been obvious to one of ordinary skill in the art to utilize appropriately effective amount of inorganic oxide, i.e. silica and clay, i.e. hydrotalcite including those within the scope of the present claims so as to produce desired end results.

### ***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Satya Sastri at (571) 272 1112. The examiner can be reached on Mondays, Thursdays and Fridays, 7AM-5.30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. David Wu can be reached on 571-272-1114.

The fax phone number for the organization where this application or proceeding is assigned is (571) 273 8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

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applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Satya B Sastri/

Examiner, Art Unit 1796